Uniformly Querying Web Knowledge Bases

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Abstract. The Semantic Web is the vision that data can be shared across the boundaries of applications and websites. With the Linked Open Data (LOD) project, this vision has become much more concrete: RDF data can be published, accessed, and linked to in a distributed manner. More than 1000 datasets carrying rich semantic information are available this way. The initiative still has a long way to go, but we believe that the time has come to think beyond it: What if all Web data, whatever its source, type, access mode, were available on the Semantic Web? How would we uniformly query the all these resources?
In our work we mainly focus on the uniformly querying and integration of data coming from different datasets with heterogeneous structures e.g. RDF dataset or Web service APIs. The first contribution of our work is a system called DORIS that enables an uniform access to Web service sources with the purpose of enriching a target Knowledge Base. The key idea of our approach is to exploit the intersection of Web service call results with a knowledge base and with other call results.
Secondly, we propose an on-line instance-based relation alignment approach between RDF datasets. The alignment may be performed during query execution and requires partial information from the datasets. We align relations to a target dataset using association rule mining approaches.